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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/811,172

03/26/2004

Daniel L. Carter

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LEXMARK INTERNATIONAL, INC.
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LEXINGTON, KY 40550

EXAMINER

YAN, REN LUO

ART UNIT

PAPER NUMBER

2854

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

E)✓

Office Action Summary

Application No.

10/811,172

Applicant(s)

CARTER ET AL.

Examiner

Ren L. Yan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 19-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 36-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5-10-2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's election without traverse of invention I, claims 1-18 and 36-44 in the reply filed on 11-18-2006 is acknowledged. Non-elected claims 19-35 have been withdrawn from further consideration.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation of "switching a transfer voltage of said image forming device from a two-sided sheet voltage to a one-sided sheet voltage" is indefinite because there are no structure nor process steps being defined regarding the two-sided sheet voltage and the one-sided sheet voltage. Therefore, it is unclear what voltage(s) this is referring to and what is to be achieved by this switching step. It should be pointed out that the claimed invention is directed to a method of duplex printing that forms images on both sides of the sheets and the reference to a one-sided sheet voltage in claim 12 does not make any sense.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 9, 10, 12-14, 17, 18 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamei(2002/0061215).

With respect to claim 1, Kamei teaches a method of duplex printing in which a media substrate is partially expelled from an image forming device at 103, comprising: transferring print material to a first side of one media substrate after a preceding media substrate has been partially expelled from said image forming device and moved into a duplex path 104 of the image forming device; and varying gaps between said media substrates as said media substrates are moved through said image forming device by holding the preceding media substrate in the duplex path 104 while feeding the one media substrate through the image forming section 1-4. See Figs. 1-3 and paragraphs [0056] through [0067] in Kamei for details.

With respect to claim 2, Kamei teaches transferring print material to a first side of the preceding media substrate prior to said preceding media substrate being partially expelled from said image forming device and moved into said duplex path 104 of said image forming device; and transferring print material to a second side of said preceding media substrate; wherein varying gaps between said media substrates as said media substrates are moved through said image forming device comprises varying a first gap and a second gap between said media substrates, said first gap being a distance between a trailing edge of said preceding media substrate and a leading edge said one media substrate and said second gap being a distance between a trailing end of one media substrate and a new leading edge of said preceding media substrate after inversion.

With respect to claim 3, Kamei teaches moving the media substrate in a vertical direction after transferring print material to the first side.

With respect to claims 4 and 5, since Kamei teaches the same exact sheet printing and feeding sequence as claimed, it follows that the second gap must be equal to or greater than said

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first gap at some point during the sheet printing and feeding operation as recited.

With respect to claim 6, Kamei teaches partially expelling said one media substrate from said image forming device at 103 and moving it into said duplex path 104; transferring print material to a second side of said one media substrate; wherein varying gaps between said media substrates as said media substrates are moved through said image forming device comprises varying said first gap, said second gap and a third gap between said media substrates, said third gap being a distance between a new trailing edge of said preceding media substrate after inversion and a new leading edge said one media substrate.

With respect to claim 7, since Kamei teaches the same exact sheet printing and feeding sequence as claimed, it follows that the third gap must be smaller than the first gap at some point during the sheet printing and feeding operation as recited.

With respect to claim 9, since Kamei teaches the same exact sheet printing and feeding sequence as claimed, it follows that the second gap is substantially equal to the first gap and the third gap is smaller than the first gap at some point during the sheet printing and feeding operation as recited.

Regarding claim 10, Kamei further teaches transferring print material to a first side of yet another media substrate; wherein varying gaps between said media substrates as said media substrates are moved through said image forming device comprises varying said first gap, said second gap, said third gap and a fourth gap between said media substrates, said fourth gap being a distance between a new trailing edge of said one media substrate and a leading edge said yet another media substrate.

Regarding claim 12, since Kamei teaches the same exact duplex printing method as

claimed, it is believed claim 12 is covered by the teaching of Kamei.

With respect to claims 13 and 14, Kamei teaches the use of a plurality of sensors 26-31 for sensing the edges of the media sheets in between the gaps.

With respect to claims 17 and 18, Kamei teaches a method of duplex printing using an image forming device, comprising: transferring print material to a first side of a first media substrate; partially expelling said first media substrate out of said image forming device at 103 and into a duplex path 104 of said image forming device; and transferring print material to a first side of a second media substrate while said first media substrate is into said duplex path 104. Kamei further teaches varying an interpage gap between said media substrates as said media substrates are moved through said image forming device as recited.

With respect to claim 36, Kamei teaches a method of duplex printing a plurality of media substrates using an image forming device as recited including moving a first media substrate to an image forming unit 1-4 of said image forming device; transferring print material to a first side of said first media substrate; moving said first media substrate partially out of said image forming device at 103 and into a duplex path 104 and moving a second media substrate to said image forming unit; transferring print material to a first side of said second media substrate; moving said second media substrate partially out of said image forming device and into said duplex path and moving said first media substrate from said duplex path to said image forming unit; transferring print material to a second side of said first media substrate; moving said first media substrate out of said image forming device and moving said second media substrate from said duplex path to said image forming unit; transferring print material to a second side of said second media substrate; moving said second media substrate out of said image forming device;

and varying gaps between said first and second media substrates as said media substrates are moved through said image forming device.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamei in view of Applicant's Admitted Prior Art(AAPA).

Kamei teaches all that is claimed except for sensing the toner patch. AAPA admits in the paragraph bridging pages 3 and 4 of the present specification that toner patch sensing is well known in the art to determine the relative alignment of one toner layer to another. It would have been obvious to those having ordinary skill in the art at the time the invention was made to provide the image forming apparatus of Kamei with toner patch sensing capability as taught by AAPA in order to ensure proper toner alignment and thus the printing quality.

Claims 15, 16 and 37-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamei in view of Uchida et al(6,836,641).

Kamei teaches all that is claimed including the use of a processor (CPU 32) for controlling said image forming device; wherein said processor is programmed to vary gaps between media substrates as said media substrates are moved through said primary path and said duplexer of said image forming device. However, Kamei does not teach the use of a plurality of image forming units for transferring a multicolor image to the substrate. Uchida et al teach a method and structure of a duplex image forming apparatus including a plurality of image

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forming units 1a-1d disposed along a primary media path and transferring a 4 image multicolor print material to a media substrate and a duplexer 20 for returning said media substrate to said primary media path. See Figs. 1 and 2 in Uchida et al for example. It would have been obvious to one of ordinary skill in the art to provide the image forming apparatus and method of Kamei with a plurality of image forming units each capable of transferring a particular color to the media sheet as taught by Uchida et al in order to achieve multicolor printing on both sides of the media sheets.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ren L. Yan whose telephone number is 571-272-2173. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 571-272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ren L Yan
Primary Examiner
Art Unit 2854

Ren Yan
Feb. 6, 2006